Cunard Grazing Allotment - #00859
Rangeland Health Standards Assessment

Allotment Overview

The Bureau of Land Management (BLM) Cunard grazing allotment is located approximately 13 miles southeast of Klamath Falls, Oregon on the northeast side of Stukel Mountain. The allotment contains 370 acres of BLM-administered public lands. Most of the allotment has steep, east to northeast aspect slopes with a pine or pine/juniper overstory. The current grazing lease for the allotment authorizes 60 animal unit months (AUMs) of livestock grazing by horses from May 1 to July 31. This allows for use by 20 head of horses.

The Cunard allotment is considered an improve or "I" category allotment under the selective management process. The I category allotments receive higher management attention due to resource conditions and/or opportunities. These allotments also typically have more monitoring studies than other allotments. The Cunard allotment has Utilization Point and Use Mapping studies that are read on a scheduled basis. Riparian photo points were established on two of the ephemeral drainages in 1991 and have been retaken in 1993 and 2000. Cole Browse monitoring was read in 1990 through 1992.

During the development of the Resource Management Plan (RMP) for the resource area, the Cunard allotment had the following Resource Conflicts/Concerns and corresponding Management Objectives identified.

Resource Conflicts/Concerns	**Management Objectives**
Under current management the range condition, level or pattern of utilization, and/or season-of-use may be unacceptable; or carrying capacity may be exceeded.	Maintain or improve rangeland condition and productivity through a change in grazing management practices, timing and/or level of active use.
Big game limited by unsatisfactory habitat condition.	Maintain or improve big game habitat in satisfactory condition.
Critical deer winter range occurs in allotment	Management systems should reflect the importance of deer winter range.
Active erosion occurs in the allotment.	Maintain and improve erosion condition in moderate or better erosion condition.
Riparian or aquatic habitat is in less than good habitat condition.	Maintain and improve riparian or aquatic habitat in good or better habitat condition.

The RMP also proposed an AUM reduction for the Cunard allotment of 20 AUMs along with a season-of-use change to May 15 through July 1.
A review of the allotment files shows that use has been made by around 20 horses since the early 1980s. The allotment was rested during 1990, 1993, and 2000. Notes in the file indicate that there has been a problem with cattle drifting onto the allotment from the Rodgers allotment to the west. This has not been a problem in recent years as the Rodgers allotment has been rested due to several ownership changes of the base property.

A summary of the Utilization Point monitoring for the two locations in the allotment is shown in the following table.

Year	Pt. 1	Pt. 2	AUMs	Livestock #
2000	no use	no use	0	no use
1997	20%	17%	60	20 *
1994	64%	65%	60	26 *
1992	84%	90%	62	26 +
1991	90%	90%	60	20 +
1989	96%	82%	60	20 *
1988	84%	86%	60	20 +
1987	82%	74%	60	20 *
1986	74%	64%	60	20 *
1985	62%	57%	60	20 *
Ave. (-2000)	73%	69%	60	20

* - # from billing
+ - # from Actual Use record

The monitoring data shows that heavy use on the allotment has been a problem in the past. This could be partly due to the drifting cattle from the adjacent allotment. Recent observations, 1997-2000, have indicated that the conditions on the allotment are improving. The perennial grass species have been increasing in density and vigor. There have been some recent prescribed fire and juniper reduction activities within the pine stands on the allotment. This has resulted in a decrease in the heavy duff layer and a subsequent increase in the grass understory.

Cole Browse monitoring was done on the allotment during 9/90, 9/91, and 5/92. The readings from 9/90 and 9/91 are complete and represent use made by the livestock and deer in the

allotment up through September. The 5/92 reading would represent use made during the winter and early spring, mainly by deer. However, this reading was not complete as the leader use portion of the worksheet was not completed. This monitoring has not been repeated and the need for it in this allotment is probably low as horses do not normally utilize browse species. The completed sheets do indicate good winter use of the browse species by deer, however.

To collect additional data for this assessment, a Rangeland Health Evaluation Summary Worksheet was completed at a representative site on the allotment on 11/07/01. This process is designed to compare the selected site to a corresponding Ecological Site Description or reference area. The selected site had an overstory of pine and juniper with some shrub species present including sagebrush and rabbittbrush. The grass understory was a mixture of needlegrass, blue wildrye, Idaho fescue, squirreltail, and bluegrasses. There was also some cheatgrass present. This area would most closely resemble a Juniper Pine Bunchgrass ecological site. There were fewer shrubs than would be expected on this site. It appears that an increase in the extent of juniper has led to a decrease in the proportion of big sagebrush, bitterbrush, and possibly mountain mahogany. This shift tends to occur faster on stony soil areas like those found at the selected site due to the competition for the limited available moisture.

The conclusions from the Worksheet indicate that the selected site had only slight to moderate departures from the Ecological Site Descriptions that would be considered most similar. These departures were in the composition of the plant community, mainly with the shift to fewer shrubs. The increase in junipers was noted as the probable cause for this shift.

The dominant plant species on the site were listed as needlegrass, ryegrass, and bluegrass species. Notes on the utilization monitoring forms indicated that the species found during monitoring included *Stipa lemmonii, Elymus glaucus, Elymus elymoides,* and *Poa secunda*. These species would be considered a lower seral stage for this ecological site. In higher seral stages, Idaho fescue (*Festuca idahoensis*) and bluebunch wheatgrass (*Pseudoroegneria spicata*) would be the dominants. These higher seral stage grasses are still present on the site, but in decreased amounts. This shift in grass species could be contributed to past heavy livestock utilization levels.

One noted area of heavy livestock use and concentration has been in the very northeast corner of the allotment, near the cattleguard and road that is the main public access to this side of Stukel Mountain. This is the area where the lessee provides water in a trough for the horses. The horses tend to linger here for the water and the shade provided by the pine stand. The understory here has been a heavy layer of pine needle duff with very few grasses or forbs present. Recent prescribed burning has decreased the duff layer and some grasses are beginning to grow in the area. With this being the main water site for the allotment, forage utilization levels and livestock concentrations will always be higher here. Its proximity to the main entrance road also results in some negative aesthetic values. However, the small size of this spot in relation to the whole allotment and the necessity of a water source for the livestock counteracts the limited amount of resource problems occurring there.

Standard 1 - Watershed Function-Uplands

This standard focuses on the basic physical functions of upland soils that support plant growth, the maintenance or development of plant populations and communities, and promote dependable flows of quality water from the watershed. Some of the indicators to be used in determining attainment of this standard include:

- amount and distribution of plant cover;
- amount and distribution of plant litter;
- accumulation/incorporation of organic matter;
- amount and distribution of bare ground, gravel, stone, and rock;
- plant composition and community structure;
- presence and integrity of biological crusts;
- absence of accelerated erosion and overland flow.

Determination of the achievement of this standard will be based upon data from the monitoring studies for the allotment, the Rangeland Health Evaluation Summary Worksheet, and the observations of BLM resource specialists.

The upland vegetation conditions in the allotment are varied due to the differing topography, the vegetation communities, and the past and current management of the resources. Over 60% of the allotments 370 acres have slopes that are greater than 15%. Most of these steeper areas have pine or pine/juniper stands with shrub and grass understories and good litter cover. There is very little bare ground in these areas and surface soil movement is minimal. In areas where the juniper stands are increasing in density, they are starting to displace some of the shrub species including the big sagebrush, antelope bitterbrush, and mountain mahogany.

Most of the areas with slopes of 15% or less also have pine or pine/juniper stands with varying levels of understory shrubs and grasses. Many of these areas have had heavier livestock utilization of the grasses and disturbance of the soil surface. As noted earlier, some shifting of the grass species from late seral to early and mid seral species has occurred. This has generally not affected the level of soil surface protection and soil movement. The species that are present are still mostly perennial with good rooting structure and soil holding capabilities. There has been an increase in exotic annual grass species noted in some areas and these do not afford the same level of soil protection due to their shallow rooting nature and short life cycles. The livestock use is generally on the less steep areas which in turn have lower levels of soil movement. The one noted area of heavier use in the northeast corner is also limited in size and fairly level with moderate surface protection from pine needles.

Recent monitoring studies and observations of the livestock grazing has shown an overall decrease in forage utilization and soil disturbance. Part of this may be contributed to the decrease in trespass livestock from the adjacent allotment due to several years of limited or no use. Recent timber management activities have also opened up more of the understories of the

forested stands which should allow for better distribution of the livestock throughout the allotment. This will help to moderate the utilization levels throughout the allotment.
As noted previously, the less steep areas have also been managed more extensively for timber production through understory thinnings, juniper reduction, and prescribed fire. Some short term negative effects to the soils from surface disturbance have occurred, but the long term benefits of increased understory vegetation should outweigh these effects.

Determination - The majority of this allotment is currently meeting this Standard. There are some small areas that have experienced higher levels of livestock use and disturbance from other management activities, but these appear to be in an upward trend.

Standard 2 - Watershed Function-Riparian/Wetland Areas

This Standard focuses on the properly functioning condition of riparian/wetland areas as appropriate to soil, climate, and landform.

Riparian and wetland areas are limited in the Cunard allotment. There are three ephemeral/ intermittent stream segments along the eastern portion of the allotment. The segments are steep and fairly well armored by vegetation, litter, and rocks. Some very dense and multi-species shrub stands can be found in these drainages. Species observed include choke cherry, serviceberry, bitter cherry, and elderberry. Two of the drainages had riparian photo points established in them in 1991. These were retaken in 1993 and 2000. The runoff in these drainages comes from the steep pine and pine/juniper slopes above them. Runoff periods appear to be fairly short and are mainly from spring snowmelt. The photos and field visits to the drainages show that they are in functioning condition for the limited amount of water they transport.

Determination - This Standard is currently being met on this allotment.

Standard 3 - Ecological Processes

This Standard addresses the ecological processes of energy flow and nutrient cycling as influenced by existing and desired plant and animal communities. Potential indicators that can

be used to determine if this Standard is being met include:

- Photosynthesis is effectively occurring throughout the potential growing season, consistent with the potential/capability of the site, as evidenced by plant composition and community structure.

- Nutrient cycling is occurring effectively, consistent with the potential/capability of the site, as evidenced by:

- plant composition and community structure;
- accumulation, distribution, incorporation of plant litter and organic matter into the soil;
- animal community structure and composition;
- root occupancy in the soil profile; and
- biological activity including plant growth, herbivory, and rodent, insect, and microbial activity.

Much of the information from Standard 1 can be used in the determination of the meeting of this Standard. As noted previously, most of the allotment has either a pine or pine/juniper overstory with various shrubs, grasses, and forbs in the understory. There has been some shift in the species composition with some of the late seral and PNC grass species being replaced by early and mid seral species. In some areas where junipers are increasing in the stands, there has been a decrease in some shrub species. These changes in the community composition are not having a significant effect on the overall ecological processes in the allotment. There is still effective photosynthesis and nutrient cycling occurring. The plants that are present are still providing high levels of litter and organic matter and have root occupancy throughout the soil profile. Recent management actions including prescribed burning, juniper thinning, and timber harvest should have positive effects on the vegetation communities and the dependent animal, insect, and microbial species.

Determination - This Standard is currently being met on this allotment.

Standard 4 - Water Quality

This Standard addresses surface and groundwater quality as influenced by agency actions and whether it complies with State water quality standards.

As noted under Standard 2 above, there are very few riparian and wetland areas on this allotment. The three stream segments in the allotment are mainly ephemeral with runoff coming during spring snowmelt. These segments are well vegetated and armored with rock. The watershed for these drainages is predominately pine and pine/juniper stands with good understory vegetation and litter cover. Very little sediment is moving through these drainages that would negatively affect water quality in the lower part of the watershed.

Determination - This Standard is currently being met on this allotment.

Standard 5 - Native, T&E, and Locally Important Species

This Standard focuses on retaining and restoring native plant and animal (including fish) species, populations and communities (including threatened, endangered, and other special status species and species of local importance).

Potential indicators that can be used to determine if this Standard is being met include;

> Essential habitat elements for species, populations and communities are present and available, consistent with the potential/capability of the landscape, as evidenced by:

- plant community composition, age class distribution, productivity;
- animal community composition, productivity;
- habitat elements;
- spatial distribution of habitat;
- habitat connectivity; and
- population stability/resilience.

The information used for determining Standards 1 and 3 also applies to this Standard. The plant communities that are present in the allotment mainly consist of native plant species with some exotic grass species present in areas of past disturbance. As mentioned earlier, most of the allotment is a pine or pine/juniper overstory with various shrubs, grasses, and forbs in the understory. There is good age class distribution through most of the species with good levels of production. Recent management activities such as prescribed fire, juniper reduction, and timber harvest have had some short-term negative effects on the understory species. However, the long-term benefits of reduced competition, increased forest canopy openings, and better moisture availability will greatly outweigh these short-term effects.

The current plant communities in the allotment are providing good habitat elements for a variety of native animal species. This allotment is considered critical deer winter range. The steep topography of the allotment limits the extent of livestock use and subsequently provides for large areas that are accessible mainly by deer. Recent and planned prescribed fire and juniper reduction projects will also provide for improved deer habitat. An increase in shrub and grass

species should occur as the timbered stands are opened up. There are also several species of birds using the allotment including golden eagles, bald eagles, and goshawks. Current livestock management is having no negative effects on these species.

Portions of this allotment were surveyed for special status vascular plants and noxious weeds in 1993. The majority of this allotment was again surveyed in 1997 under a botanical contract for special status vascular plants and noxious weeds. As a result of these combined surveys, one site of Sierra onion (*Allium campanulatum)* was documented. At the time of this site discovery, this species was thought to be uncommon, but has since been found to be common and currently has no special status. No noxious weed sites are documented for this allotment.

Determination - This Standard is currently being met on this allotment.

Management Recommendations

The RMP made several recommendations concerning management objectives for this allotment. These are shown below.

Resource Conflicts/Concerns	**Management Objectives**
Under current management the range condition, level or pattern of utilization, and/or season-of-use may be unacceptable; or carrying capacity may be exceeded.	Maintain or improve rangeland condition and productivity through a change in grazing management practices, timing and/or level of active use.
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These will be addressed individually in relation to the current conditions and recent management activities on the allotment.

The first management objective to improve conditions through a change in the grazing management is being partially implemented on a passive basis. The recent monitoring studies on the allotment indicate that overall utilization levels have decreased. This appears to be due in

part to the recent change in use on the adjacent Rodgers grazing allotment. Past records indicate that livestock drift from that allotment onto the Cunard allotment occurred annually. A series of ownership changes of the private base property during the last three to four years has resulted in several years of limited or no use on the Rodgers allotment and subsequently there has been no drift onto the Cunard allotment. In addition, there has been less actual livestock use of the Cunard allotment in recent years. Increased active management of the timber stands in the allotment has also opened up more areas that allow for better distribution of the livestock.

When the livestock use on the Rodgers allotment is reestablished, some management changes may need to be implemented to control the livestock drift. Presently, there is no effective allotment boundary fence between the Rodgers and Cunard allotments. The steep slopes along the west side of the Cunard allotment were originally considered an effective deterrent to livestock drift. Construction of approximately one mile of fence along the top of this ridge would provide a better control method. The attached map shows the proposed location for this fence.

Monitoring of utilization levels will also be continued on the Cunard allotment. If these levels exceed the recently observed light to moderate levels, then changes in livestock number and/or the season of use will be implemented.

The next two management objectives listed above deal with wildlife habitat conditions in the allotment. As noted throughout the assessment, the steep topography of the allotment limits livestock movement. Most of the allotment is only accessible by deer and other wildlife. The livestock accessible areas have seen decreased use in recent years and appear to be on an upward trend. Recent and planned management activities including prescribed burning and juniper reduction should also improve wildlife habitat in the allotment. Additional juniper management opportunities should be explored.

The next management objective addresses control of erosion in the allotment. Recent monitoring and general observations of the allotment have not shown areas of concern for erosion problems. Past photos in the monitoring files do show some heavily used livestock trails that may have been the basis for this objective. These trails are fairly limited in their extent and would be hard to change other than to build drift fences to divert the livestock from those areas. The steep topography in the allotment can also provide for increased runoff and soil movement, especially in areas with little canopy or soil surface protection. Most of the allotment has a dense overstory of trees with a good litter cover to provide protection. The main access road running through the allotment may also act as a conduit for increased runoff concentration in some areas. Continued monitoring of the allotment should identify any areas of erosion concern.

The last management objective addresses riparian/wetland areas. As discussed in the assessment, these areas are limited to some ephemeral stream channels. These channels are well armored by vegetation and rocks and are properly functioning for the amount and duration of water flow they transport. Riparian health does not currently appear to be a concern in this allotment.

Monitoring

This allotment is considered an "I" category for monitoring purposes. Utilization monitoring and use mapping should continue on the allotment and be read on an every other year schedule. Recent observations have shown that conditions are improving and this should be confirmed. When the adjacent Rodgers allotment is used again, use supervision to check for livestock drift may need to be intensified.
Klamath Falls Resource Area has a very proactive weed program which includes inventories and site treatments that consist of biological, chemical, and manual treatments. The treatment efforts are to contain weed sites, reduce population size, and eradicate weed sites where possible. This allotment should continue to be included in any weed monitoring or inventories, primarily due to the public access road that runs through the allotment.

Contributors/Reviewers	**Title**
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Determination

( ) Existing grazing management practices and/or levels of grazing use on the Horton grazing allotment promotes achievement or significant progress toward the Oregon Standards for Rangeland Health and conforms with the Guidelines for Livestock Grazing Management.

( ) Existing grazing management practices and/or levels of grazing use on the Horton grazing allotment will require modification or change prior to the next grazing season to promote achievement of the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

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Manager, Klamath Falls Resource Area Date